

## CLAIMS

1. A monitoring system comprising a twin-camera composed of first and second cameras forming a pair,

5        said first and second cameras being disposed such that at least portions of the ranges to be captured thereby overlap each other, and that the optical axes thereof form a predetermined angle of divergence when said optical axes are projected on a camera installation plane parallel to said optical axes,

10        the twist around the optical axis of at least one of said first and second cameras being set such that when an u-v plane of the visual field range of said at least one camera is projected on a reference plane at a right angle to the optical axis of said at least one camera, the u axis is not  
15        parallel to and does not intersect, at a right angle, the intersecting line of said reference plane and said camera installation plane.

20        2. A monitoring system according to Claim 1, wherein said twin-camera is mounted on a vehicle for capturing both the surrounding of said vehicle and a place distant therefrom.

25        3. A monitoring system according to Claim 2, wherein said twin-camera is disposed such that said angle of diver-

gence is not less than  $50^{\circ}$  and not greater than  $90^{\circ}$ , and  
that said twist is not less than  $10^{\circ}$  and not greater than  
35° on the assumption that said twist is  $0^{\circ}$  when said u axis  
on said reference plane is parallel to said intersecting line  
5 of said reference plane and said camera installation plane.

4. A monitoring system according to Claim 1, wherein  
each of said first and second cameras has a visual field  
range in the form of a square.

10 5. A method of adjusting a twin-camera composed of a  
pair of cameras mounted on a vehicle for capturing both the  
surrounding of said vehicle and a place distant therefrom,

15 said camera adjusting method being characterized in  
that the tilt, pan and twist around the optical axis of each  
of said pair of cameras, are adjusted using, as indexes, the  
length of a portion, as captured by each camera, of the  
straight line indicating the capturing direction, the length  
of a portion, as captured by each camera, of a straight line  
20 extending along the vehicle end, and the area of the blind  
zone in the capturing direction.

6. A vehicle monitoring system comprising:

25 a plurality of cameras for capturing the surrounding of  
a vehicle; and

an image processing unit for generating, from the images captured by said plurality of cameras, a synthesized image viewed from a virtual view point,

said plurality of cameras comprising a twin-camera composed of two cameras which form a pair and which are disposed in the close vicinity to each other.

7. A vehicle monitoring system according to Claim 6, wherein said twin-camera is mounted in a unitary structure.

8. A vehicle monitoring system comprising:

one or a plurality of cameras for capturing the surrounding of a vehicle; and

an image processing unit for generating, from the images captured by said one or plurality of cameras, a synthesized image viewed from a virtual view point,

at least one of said one or plurality of cameras being mounted on said vehicle at its lateral side, a non-movable part of its door mirror, its window visor or its door knob mounting part.

9. A vehicle monitoring system comprising:

one or a plurality of cameras for capturing the surrounding of a vehicle; and

an image processing unit for generating, from the im-

ages captured by said one or plurality of cameras, a synthesized image viewed from a virtual view point,

at least one of said one or plurality of cameras being disposed as corresponding to illumination means for irradiating light to the range to be captured by said at least one camera.

10. A vehicle monitoring system comprising:

one or a plurality of cameras for capturing the surrounding of a vehicle; and

an image processing unit for generating, from the images captured by said one or plurality of cameras, a synthesized image viewed from a virtual view point,

at least one of said one or plurality of cameras being so retractably mounted on said vehicle as to be ejected when said camera is used, and as to be housed when said camera is not used.

11. A vehicle monitoring system according to Claim 10, wherein said retractable camera is arranged such that its ejecting and housing is controlled according to at least one of the gear setting or travelling speed of said vehicle.

12. A vehicle monitoring system comprising:

one or a plurality of cameras for capturing the sur-

rounding of a vehicle; and

an image processing unit for generating, from the images captured by said one or plurality of cameras, a synthesized image viewed from a virtual view point,

5           at least one of said one or plurality of cameras being  
mounted on said vehicle together with an openable member dis-  
posed at the front in the capturing direction of said at  
least one camera,

10       said openable member being so controlled as to be  
opened when said camera is used, and as to be closed when  
said camera is not used.